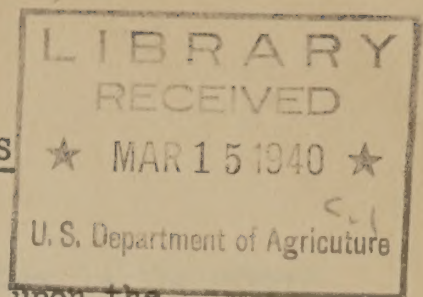


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SAFE WATER SUPPLIES FOR FARM HOMES

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To a large extent, successful farm life depends upon the health and comfort of the farm family. Nothing else is so essential in providing health and comfort as an adequate, safe supply of water. Without question, the water supply must be sufficient for household use, to supply the stock, water the garden and perhaps for some irrigation. Certainly, the water should be cool, good to the taste, free from unpleasant odors, and not too highly mineralized. In addition to these qualifications, however, none is more important than that it be free from disease-producing germs.

Water supplies originate chiefly from rainfall. Upon reaching the earth the rain water is relatively pure. After washing over the ground much dirt and filth is picked up, which without some means of purification, renders it unfit for use. Filtration through the soil removes a large part of the dirt, germs, and other contaminating material. For this reason, water which is secured from underground sources is usually considered safer for use than from sources which are open to all forms of contamination such as from lakes, ponds and streams. Wells and springs are, therefore, the chief sources of farm water supplies.

Of the diseases known to be transmitted by water, the important ones are: typhoid fever, dysentery, and diarrhea. These are caused by some of the germs entering the human body by means of water which one drinks. The bacteria do not originate in the water but enter with either surface water drainage or underground drainage from some source such as from a sewer, cess-pool, or privy. The first

important step in securing safety for a water supply then is the proper location of the well or spring. The site must be above and sufficiently far enough away from any sewer, privy, barnyard or other source of contamination. The well or spring must be constructed so that no water which runs off the ground may enter into the supply. All possible openings such as the space between the pump and casing of the well, or the manhole into the spring basin, should be tightly sealed to keep out flies, insects and animals.

One form of surface water frequently used is that from cisterns in which rain is collected from the roof of house or barn. Rain water has one advantage in that it is soft. In some sections of the country because ground water is highly mineralized or difficult to secure at all, cistern water is used exclusively. Cisterns should be made of good water-tight material, preferably of concrete, and entirely closed. Pumps should be used to draw water from the cistern. Sometimes filters are built in the cistern and waste-water valves are inserted in the roof leaders to improve the quality of cistern water.

Springs are commonly used in some parts of the country because they are practically unfailing, and produce clear, cool water. When spring water comes from limestone strata it may be clear and cool, but it also may be dangerous. This is because of the underground channels which are fed by water coming through crevices or breaks in the rock, through which the water passes. Often these streams are contaminated from sewers, privies, or cesspools located miles away. Care must be used in selecting spring water as a supply, more care must be used in building a tight basin about the source, and ditching to keep out surface drainage.

There are several types of wells so named from the method of constructing them, such as drilled, bored, driven and dug wells. Drilled wells are commonly found where the water is located at considerable depth below the surface, while the other types are found mostly where the earth is loose, easy to penetrate and the water not far below the surface. In addition there are combinations of these types of wells. Drilled wells are usually sunk by means of a rig equipped with either rotary or percussion type drills. The hole is lined with metal casing which may only extend to rock formation where a seal is made to keep out surface water, or the casing may be continued to water-bearing sands and equipped with some type of strainer. Bored wells are similar in construction, except that the depth is not so great and the hole is bored with a hand auger. Lining for the drill hole is usually of metal or tile. Driven wells are generally of small size pipe, driven to water-bearing sand by means of a maul, hammer, or water jet. Dug wells are those dug by hand, are usually shallow and of large diameter. Lining may be of metal, stone, brick or concrete. Wood lining is used to some extent but it is not satisfactory as it soon rots out.

Two types of wells are illustrated here:

Figure #1, shows the essential features of a drilled or bored well. The lining is of metal and is carried down far enough to prevent entrance of surface water. At the surface the casing is carried about one foot beyond to allow for the concrete apron and pump. Notice that the casing extends up within the pump base. The pump cylinder is placed down inside the well so that priming the pump is unnecessary.

Figure #2, shows a good type of dug well with the walls of concrete. The top is also of concrete but poured separately with overlapping edges. The drop-pipe and cylinder are inserted through the short piece of pipe placed in the top. A mound of earth has been made about the top to divert any waste water.

A little attention given now to protecting the water from contamination may save considerable trouble later.

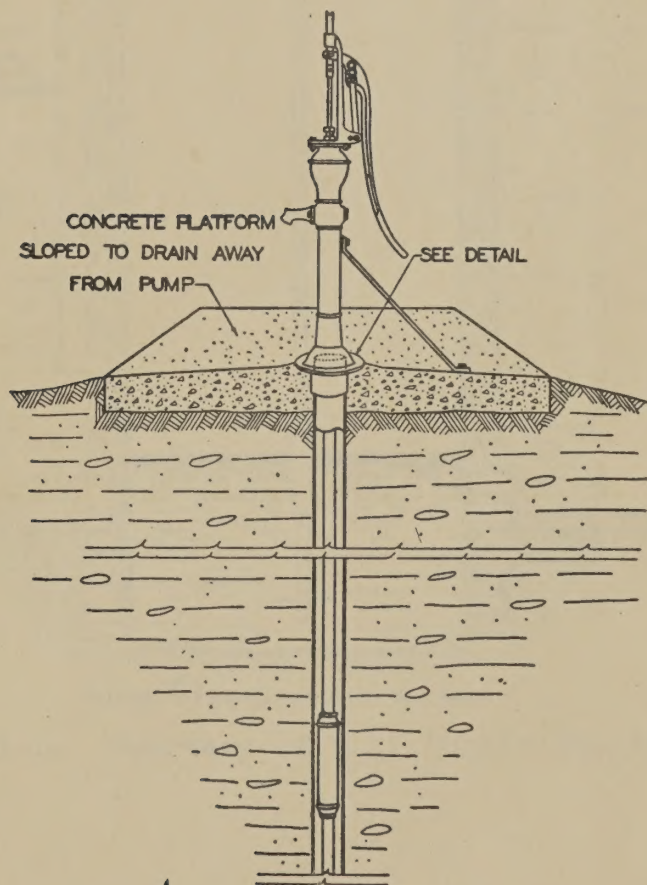


FIGURE 2—Properly constructed drilled or bored well.

Illustration: Courtesy of U. S. Public Health Service

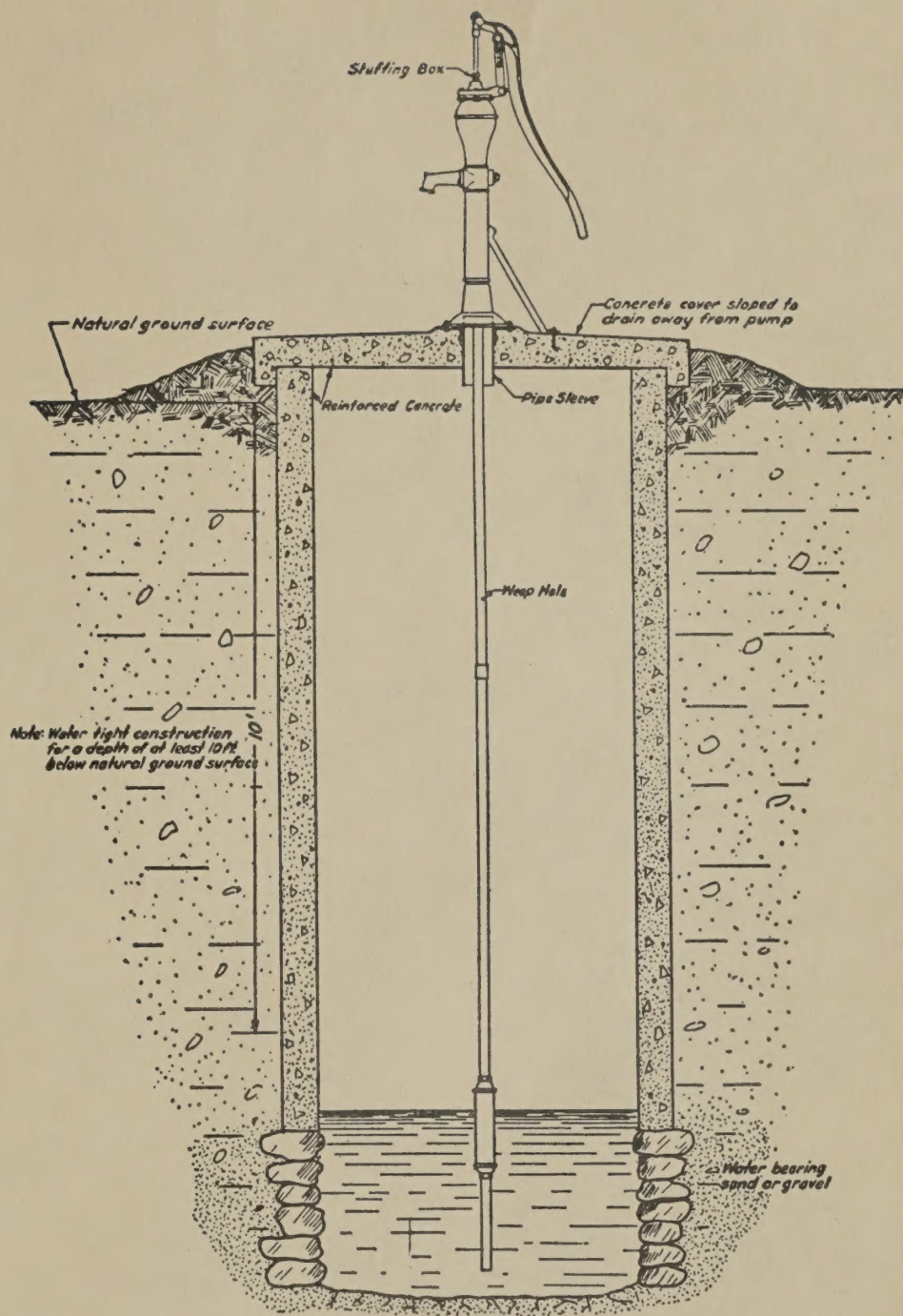


FIGURE — Properly constructed dug well.

Illustration: Courtesy of U.S. Public Health Service.

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